

*See Next Specification*

N° 3531



A.D. 1904

Date of Application, 12th Feb., 1904

Complete Specification Left, 12th Dec., 1904—Accepted, 12th Jan., 1905

PROVISIONAL SPECIFICATION.

**Improvements in Dry Milk and Milk-like Products**

I, JAMES ROBINSON HATMAKER, Gentleman, of No. 25 Rue de la Faisanderie, Paris, France, do hereby declare the nature of this invention to be as follows

The object of my invention is to produce dry milk of improved digestibility.

5 The albuminous portion of cow's milk, for example, is somewhat difficult of digestion, particularly by persons whose digestion is impaired or not fully developed, such as infants and invalids. This is principally due to the fact that such albuminous portion is in the form of an albumin. During natural digestion such albumin is changed into peptone. When sufficiently digested to lose its character as an albumin it becomes albumose—a term used broadly  
10 throughout this specification to mean partly digested albuminous material that is between albumin and peptone in chemical transformation.

To obtain dry milk the albuminous portion of which is albumose *i.e.* changed towards peptone, I treat liquid milk from which the water is to be evaporated to obtain dry milk with a digestive agent such as pepsin or pancreatin or with  
15 a hydrolytic agent such as superheated steam. When the desired chemical change has been effected the water of the said milk is evaporated, preferably rapidly by suitably exposing it to a high temperature, and dry milk of improved digestibility obtained.

20 The albuminous constituents of this new dry milk resemble those of human milk in chemical composition.

An excellent dry product closely approximating dry human milk can be made by adding to the changed milk above described, before it is dried, a suitable proportion of cream, and by adding to it then or after it is dried, a suitable proportion of milk sugar. Thus a practically perfect substitute for  
25 mother's milk can be obtained—dry humanized cow's or other milk. Dried at a high temperature such milk is absolutely sterile soluble and conservable and of great convenience and value.

Various preparations for invalids and others in which the albuminous constituents of milk are changed into albumose may be made by adding to the  
30 changed milk above described such other suitable ingredients as may be desired, without departing from the spirit of my invention

Milk deprived of all or any portion of its fat or to which fat has been added and milk the other constituents of which have been increased or diminished may be used as desired.

35 Dated this 11th day of February, 1904.

JAMES ROBINSON HATMAKER.

COMPLETE SPECIFICATION.

**Improvements in Dry Milk and Milk-like Products**

40 I, JAMES ROBINSON HATMAKER, Gentleman, of No. 25 Rue de la Faisanderie, Paris, France, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:

The object of my invention is to produce dry milk of improved digestibility.

[Price 8d.]



*Hatmaker's Improvements in Dry Milk and Milk-like Products.*

The albuminous portion of cow's milk, for example, is somewhat difficult of digestion, particularly by persons whose digestion is impaired or not fully developed, such as infants and invalids. This is principally due to the fact that such albuminous portion is in the form of an albumin. During natural digestion such albumin is changed into peptone. When sufficiently digested to lose its character as an albumin it becomes albumose—a term used broadly throughout this specification to mean partly digested albuminous material that is between albumin and peptone in chemical transformation. 5

To obtain dry milk the albuminous portion of which is albumose *i.e.* changed towards peptone, I treat liquid milk from which the water is to be evaporated to obtain dry milk with a digestive agent such as pepsin or pancreatin or with a hydrolytic agent such as superheated steam. When the desired chemical change has been effected, the water of the said milk is evaporated, preferably by suitably exposing it to a temperature sufficiently high to cause a rapid evaporation of its contained water, as described in the Specification of British Letters Patent No. 8743 of 1903—and dry milk of improved digestibility obtained. 10 15

The albuminous constituents of this new dry milk resemble those of human milk in chemical composition.

An excellent dry product closely approximating dry human milk can be made by adding to the changed milk above described, before it is dried, a suitable proportion of cream, and by adding to it then or after it is dried, a suitable proportion of milk sugar. Thus a practically perfect substitute for mother's milk can be obtained—dry humanized cow's or other milk. Dried at a high temperature such milk is absolutely sterile, soluble and conservable and of great convenience and value. 20 25

Various preparations for invalids and others in which the albuminous constituents of milk are changed into albumose may be made by adding to the changed milk above described such other suitable ingredients as may be desired, without departing from the spirit of my invention 30

Milk deprived of all or any portion of its fat or to which fat has been added and milk the other constituents of which have been increased or diminished may be used as desired.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is: 35

1. The hereinbefore described dry milk obtained by drying liquid milk the albuminous portion of which has been changed from albumin to albumose

2. The hereinbefore described dry milk obtained by drying rapidly, as hereinbefore indicated, liquid milk the albuminous portion of which has been changed from albumin to albumose. 40

3. Dry products obtained by drying liquid mixtures of substances other than milk and milk the albuminous portion of which has been changed from albumin to albumose.

4. Dry products obtained by drying rapidly, as hereinbefore indicated, liquid mixtures of substances other than milk and milk the albuminous portion of which has been changed from albumin to albumose. 45

5. Dry products containing the albuminous portion of milk in the form of albumose, obtained by drying rapidly, as hereinbefore indicated, liquids containing milk albumin that has been changed to albumose. 50

Dated this 10th day of December, 1904.

JAMES ROBINSON HATMAKER.



